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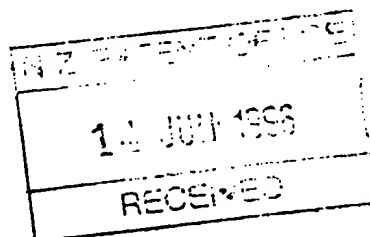
NEW ZEALAND
PATENTS ACT 1953

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COMPLETE SPECIFICATION
CONCRETE TOP ROTARY MILKING PLATFORMS

We, **ANDERSON & ROONEY ENGINEERING COMPANY LIMITED**, a New Zealand company of 118 Main Road, Winchester, New Zealand hereby declare the invention, for which We pray that a patent may be granted to us and the method by which it is to be performed, to be particularly described in and by the following statement:

PT0508132



CONCRETE TOP ROTARY MILKING PLATFORMS

The invention relates to rotary milking platforms and particularly to a concrete top rotary milking platform.

At present a number of constructions of rotary milking platform are available and most of these are constructed with platforms constructed from metal materials. The cost of completing erection of this type of platform can be expensive because of the amount of welding required on site. A complete steel structure is also expensive because of the raw material cost. The welds in a steel structure can form weak points in the structure because the metal materials may not be as well protected against corrosion as the rest of the structure.

An object of the invention is therefore to provide a rotary milking platform which overcomes at least in part the disadvantages identified above at the same time as providing the public with a useful alternative choice.

Further objects and advantages of the invention will become apparent from the following description which is give by way of example.

According to a first aspect of the invention there is provided a method of construction for a rotary milking platform, the method including the steps of:

- forming in known manner from a cementitious material a foundation for a rotary milking platform;
- supporting a round, in plan, shaped beam constructed from a metal material on the foundation;
- placing on the beam a framework of radially extending members;

erecting on the framework an annular metal work platform from sector shaped parts which are transported to the building site to be welded/bolted together;
placing on the foundation and in association with the beam a drive system for rotating the platform;
placing around the ends of the radially extending members an outer ring to form a border frame;
placing on the framework reinforcing rods and if required, reinforcing mesh;
fitting beneath and/or between adjacent radially extending members steel shutters;
pouring on the shutters a cementitious mix in the annular shaped area formed by the outer ring and outer edge of the annular metal work platform;
vibrating and screeding off the cementitious mix to thereby form an annular concrete-topped platform on which cow bails are mounted together with ancillary known milking equipment.

According to a second aspect of the invention there is provided a concrete top rotary milking platform manufactured in accordance with the method according to the first aspect of the invention.

According to a third aspect of the invention there is provided a semi-kitset formwork for a rotary milking platform the formwork being temporarily erected from a round, in plan, shaped beam on which an annular metal work platform is temporarily erected from radially extending members in association with which is a drive system for rotating the platform, the platform having placed around its periphery an outer ring which forms a border framework, the adjacent radially extending members having fitted



therebetween reusable steel shutters, the temporarily erected structure being demounted into kitset sections for transportation to a site for erection on a rotary milking platform foundation so that after the addition of reinforcing to the annular platform a cementation mix can be added to form a concrete top rotary milking platform.

The framework can be formed from channel section members positioned in an inverted position on the shaped beam.

The round, in plan, shaped beam can be I-shaped in section.

The steel shutters can be removable for reuse by holding them in position with removable tubes extending through holes in opposed edges of adjacent channel section members.

The temporarily erected framework can be demounted into sections suitable for easy transportation such as a sixty bail platform can be cut into six sections of ten bails and an eighty bale platform is cut into eight sections. The central walkway platform section of the framework can be cut into four or six sections. The number of sections depends on the overall capacity of the platform.

The bails are normally positioned on the platform after it has been erected on its farm site.

Further aspects of the invention which should be considered in all its novel aspect will be come apparent from the following description which is given by way of example.

An example of the invention will now be described with reference to the accompanying drawings in which:

Figure 1 is a plan view partly exploded apart with details showing a concrete top rotary milking platform;

Figure 2 shows a detail of the region A (Figure 1) prior to the placement of the reinforcing and laying of a cementitious material thereon;

Figure 3 shows on an enlarged scale a plan detail of part of the annular platform;

Figure 4 shows a section on the lines A-A through the plan view shown in Figure 3;

Figure 5 shows a section on the lines B-B shown in Figure 4;

Figure 6 shows a section on the lines C-C through the ring shown in Figure 4;

Figure 7 shows a perspective view showing a drive mechanism for rotating the concrete top milking platform.

In the accompanying drawings the rotary milking platform is generally indicated by arrow 1 and for the sake of convenience the lower foundations 2 for the platform 1 which are constructed in known manner, are not shown in any detail.

The first step in construction is the placement on suitable temporary braces (not shown) of a beam member 3 which in plan is circular. As is shown in Figure 7 this beam may be I-shaped in section and is adapted to be driven or rotated by an appropriate drive mechanism 4 (shown in Figure 7). The drive mechanism 4 consists of a pair of rollers 5, the periphery 6 of which are rubber coated so that drive of at least one of the rollers 5 causes frictional contact with part 7 of the I-beam member 3 to rotate the platform 1 at a desired speed. The I-beam member 3 is mounted on suitable bearings, not shown in detail, so that the platform bail's, together with any stock standing thereon readily rotate under the power of the driven roller(s) 5.

The I-beam member 3 has mounted thereon a series of radially extending members 8. The members 8 are advantageously channel sections and are mounted inverted as shown (Figure 3). These members 8 are welded in-situ onto the I-beam member 3. Off site the members 8 are each manufactured with tubular members 9, 10 and lugs 11, 12 all of which have particular uses as defined below. The inside edge 13 of the members 8 has mounted thereon an annular metal platform 14 the outer edge 15 of which has a downwardly depending skirt 16 which is welded to the top edge 17 of the members 8. Reinforcing 18 may be welded in association with member 10 and lugs 11.

An outer ring plate 19 which eventually forms a border of the form work and a level for screeding of the concrete is placed around the ends 20 of the channel members 8 as shown in Figures 2 and 4. Reinforcing is then laid on the framed up platform as required. This reinforcing may include mesh and/or round bars to give the required strength when concrete is poured and has set.

Temporary steel shutters 22, 22' are then inserted to form a base for the concrete. The shutters 22, 22' (Figure 2) extend between adjacent members 8, 8' as is shown in Figures 1 and 2. The shutters are generally the shape of truncated sectors and are slidingly engaged directly beneath the bottom 23 of the outer ring 19 and on top of the I-beam 3. The outer ends 24 of the steel shutters 22, 22' are held in place by a steel tubular member 25 fitted in holes 26 appropriately positioned in the channel members 8.

The lugs 12 form ledges on which the reinforcing 21 is laid and optionally welded to provide the necessary concrete clearance.

At this point a cementitious material is poured on the platform 1 and is vibrated in the usual manner. The form work is screeded off by using the top 26 of the outer ring 19 and by utilising an appropriate ledge (not shown) on the screed and vibrator which runs around the top 27 of the annular metal platform 14.

After the concrete has set the steel shutters 22, 22' can be removed and the internal bracing (not shown) removed so that the completed concrete top rotary milking platform is ready for the placement thereon of bails and other ancillary milking equipment. The bails (not shown) are held in position by member 9 and the member 10 provides a means of both cleaning the platform and for the removal of pipes etc. associated with the milking equipment.

The lower edge 28 of the completed platform 1 is sealed after manufacture by the placement of a skirt 29 (Figure 7) which protects the interior of the platform from the ingress of deleterious matter including water. In the example the skirt 29 is formed as a vertical wall in two parts. The

upper part (not shown) is mounted relative to the platform and the remainder is an upwardly extending skirt positioned and held in place on the foundation.

Thus by this invention there is provided a concrete top rotary milking platform.

A particular example has been described and it is envisaged that improvements and modifications can take place without departing from the scope of the appended claims.

WHAT WE CLAIM IS:

1. A method of construction for a rotary milking platform, the method including the steps of:
 - forming in known manner from a cementitious material a foundation for a rotary milking platform;
 - supporting a round, in plan, shaped beam constructed from a metal material on the foundation;
 - placing on the beam a framework of radially extending members;
 - erecting on the framework an annular metal work platform from sector shaped parts which are transported to the building site to be welded/bolted together;
 - placing on the foundation and in association with the beam a drive system for rotating the platform;
 - placing around the ends of the radially extending members an outer ring to form a border frame;
 - placing on the framework reinforcing rods and if required, reinforcing mesh;
 - fitting beneath and/or between adjacent radially extending members steel shutters;
 - pouring on the shutters a cementitious mix in the annular shaped area formed by the outer ring and outer edge of the annular metal work platform;
 - vibrating and screeding off the cementitious mix to thereby form an annular concrete-topped platform on which cow bails are mounted together with ancillary known milking equipment.
2. A method of construction for a rotary milking platform as claimed in claim 1 and substantially as hereinbefore described with reference to the accompanying drawings.



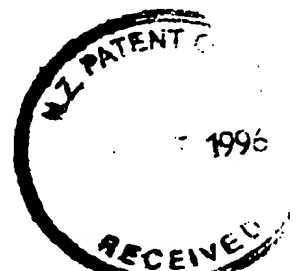
3. A concrete top rotary milking platform manufactured in accordance with the method as claimed in claim 1 or claim 2.
4. A concrete top rotary milking platform as claimed in claim 3 wherein the framework is formed from channel section members positioned in an inverted position on the shaped beam.
5. A concrete top rotary milking platform as claimed in claim 3 or claim 4 wherein the round, in plan, shaped beam is I-shaped in section.
6. A concrete top rotary milking platform as claimed in any one of claim 3 to 5 wherein the steel shutters are removable for reuse by holding them in position with removable tubes extending through holes in opposed edges of adjacent channel section members.
7. A concrete top rotary milking platform substantially as hereinbefore described with reference to the accompanying drawings.

ANDERSON & ROONEY ENGINEERING
COMPANY LIMITED

By Their Attorneys
BALDWIN SON & CAREY

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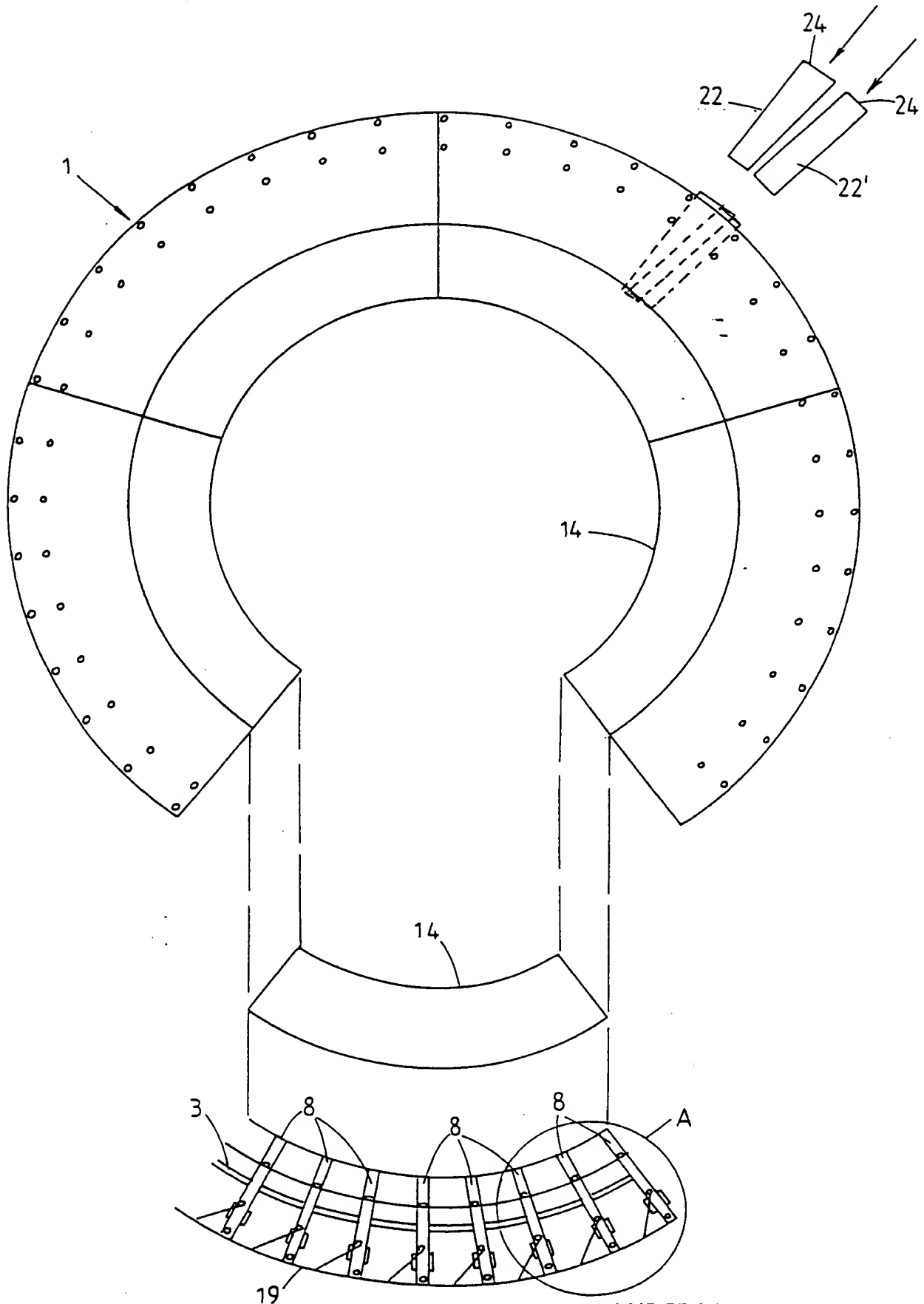


FIG. 1

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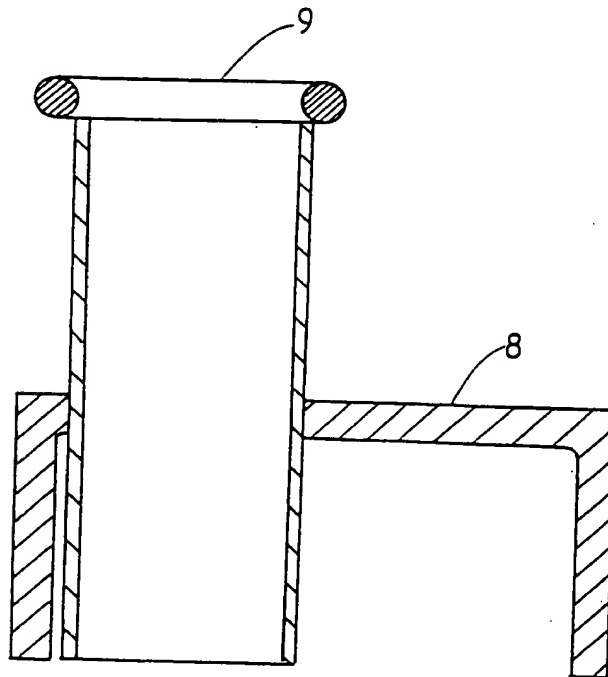
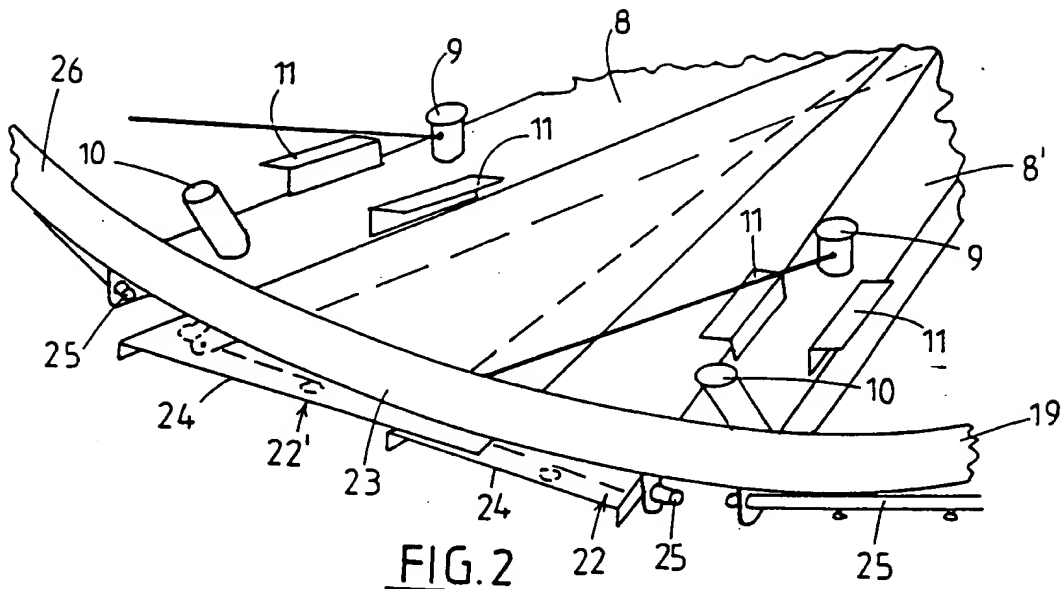
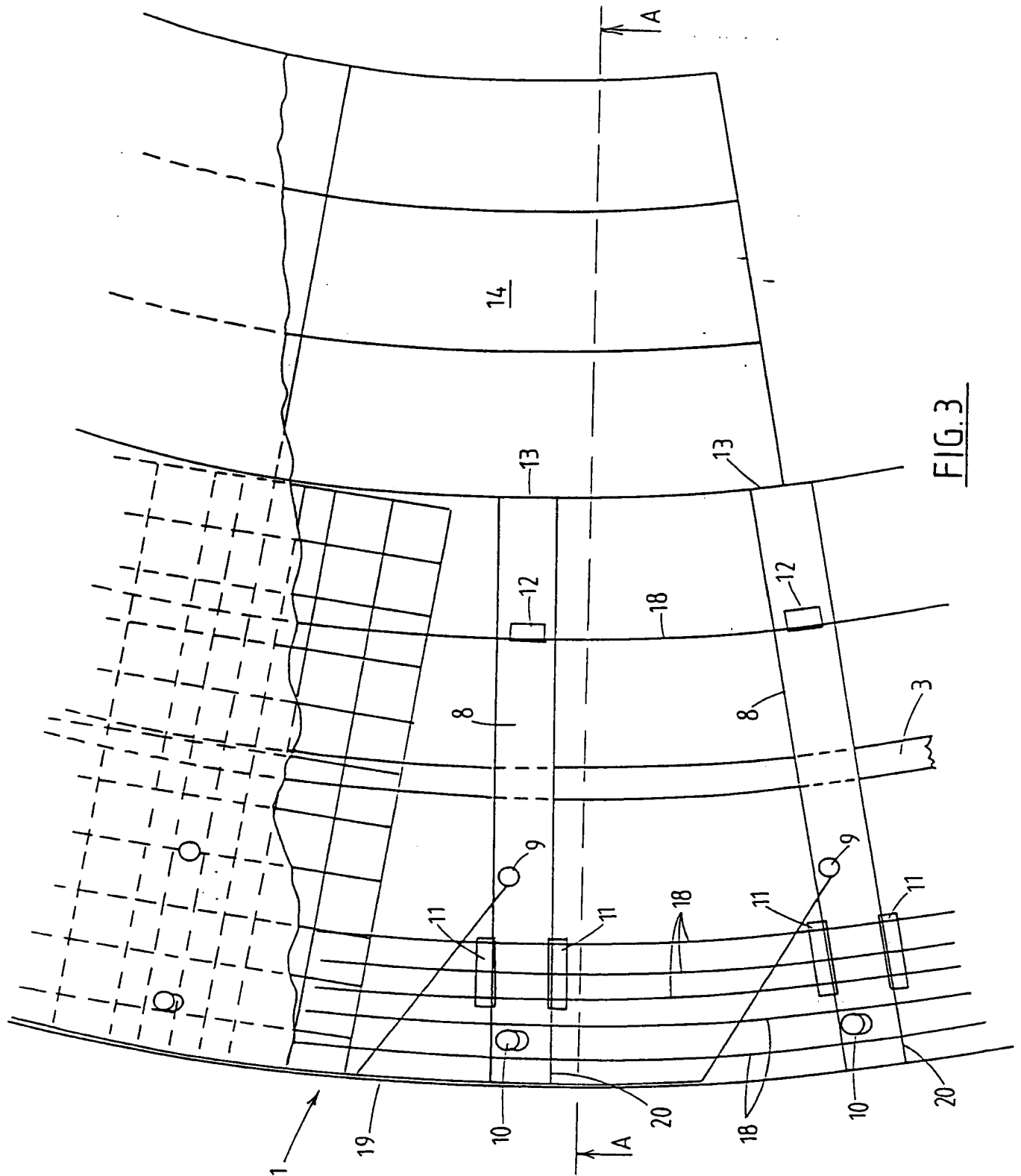


FIG. 5

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COMPANY LIMITED

[Signature]
By Their Attorneys



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COMPANY LIMITED

By Their Attorneys

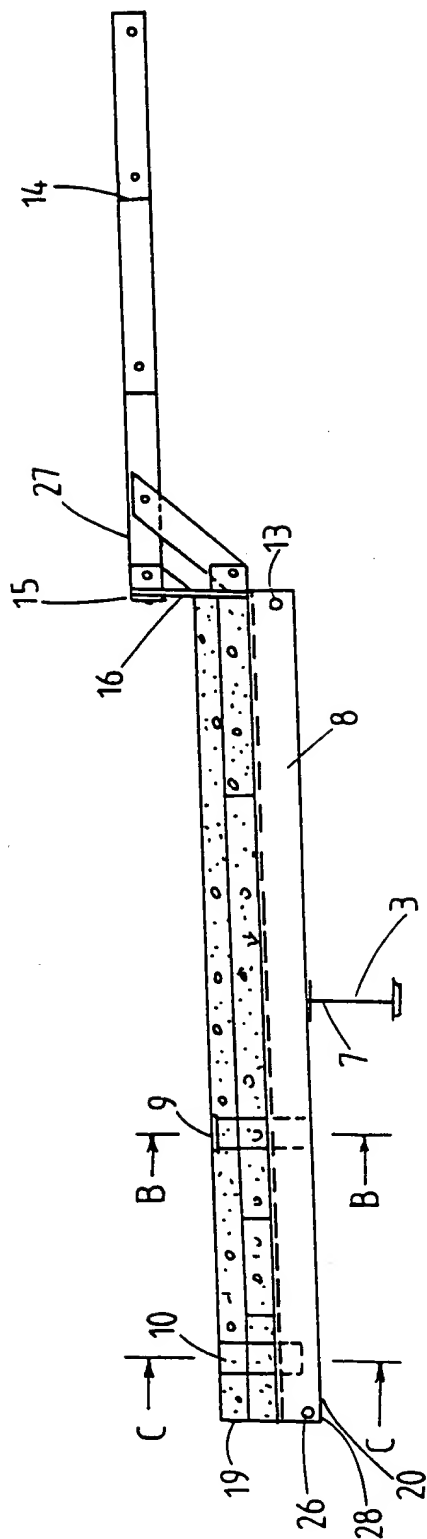
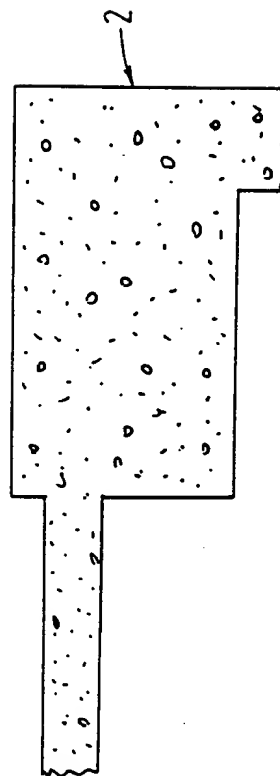


FIG. 4



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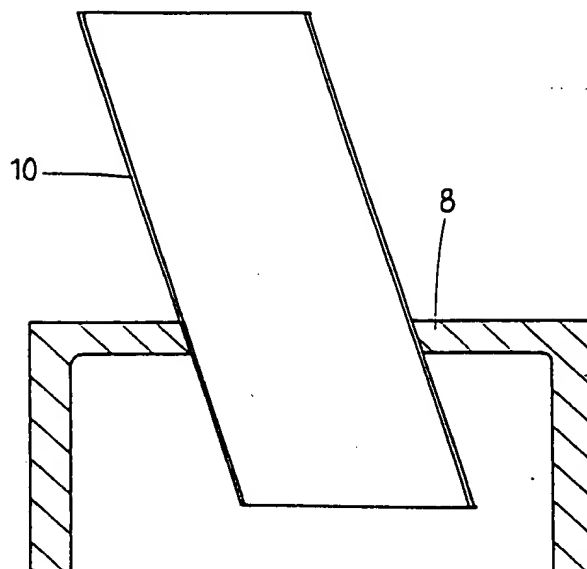


FIG. 6

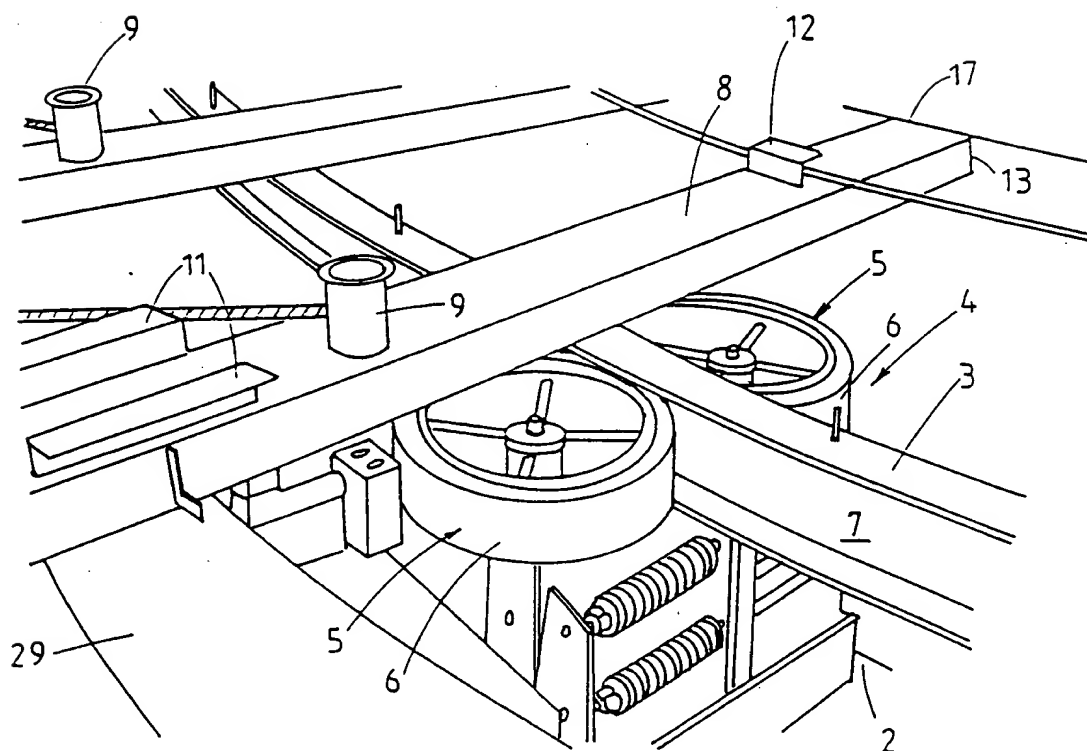


FIG. 7

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By Their Attorneys